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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/733,686	12/08/2000	Alexander Goldovsky	9	3232

7590 10/17/2003

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EXAMINER

DO, CHAT C

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 10/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/733,686	GOLDOVSKY, ALEXANDER	
	Examiner	Art Unit	
	Chat C. Do	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-17 is/are rejected.
- 7) ☒ Claim(s) 5-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations in claim 1 must be shown or the feature(s) canceled from the claim(s), particularly "the flag generation circuit... signal of the adder". No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: the applicant is advised to update the information cited in the related applications and background of the invention sections.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1-4, 9-10, 12, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Poon (U.S. 5,257,218).

Re claim 1, Poon discloses in Figures 8-15 an adder comprising: a plurality of computational stages (e.g. row0-row3 in Figure 10 for computing carry-output) each associated with one or more bit positions of the adder (A0-A7 and B0-B7 in Figure 10), the plurality of computational stages including one or more computational stages for generating a sum output signal (500 in Figure 13) and a primary carry-output signal of the adder (C_{N-1} from 300 in Figure 13); and a flag generation circuit coupled to at least one signal line of at least one of the computational stages and operative to generate an overflow flag (col. 13 lines 9-12) for the adder, the overflow flag being generated substantially in parallel with generation of at least one of the sum output signal and the primary carry-output signal of the adder (300 and 500 in Figure 13).

Re claim 2, Poon further discloses in Figures 8-15 the adder comprises an n-bit adder (e.g. 1-bit adder in Figure 12) and the sum output signal comprises a final sum bit of the n-bit adder (S_0-S_{N-1} in 500).

Re claim 3, Poon further discloses in Figures 8-15 the adder comprises an n-bit adder and the sum output signal comprises a primary carry-output signal of the n-bit adder (C_{N-1}).

Re claim 4, Poon further discloses in Figures 8-15 the flag generation circuit does not require the primary carry-output signal to generate the overflow flag for the adder (col. 13 lines 9-12).

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Re claim 9, Poon further discloses in Figures 8-15 the adder comprises a prefix tree adder having a plurality of prefix trees, each associated with one of the bit positions of the adder and including one or more of the computation stages (Figure 15).

Re claim 10, Poon further discloses in Figures 8-15 the adder comprises a carry-lookahead adder (col. 20 lines 22-24).

Re claim 12, Poon further discloses in Figures 8-15 the adder comprises a ripple adder (col. 1 lines 20-25).

Re claims 14-15, Poon further discloses in Figures 8-15 the adder comprises a radix-2 adder and non-radix-2 adder.

Re claim 16, it is an integrated circuit claim of claim 1. Thus, claim 16 is also rejected under the same rationale in the rejection of rejected claim 1.

Re claim 17, it is a method claim of claim 1. Thus, claim 17 is also rejected under the same rationale in the rejection of rejected claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Poon (U.S. 5,257,218).

Re claims 11 and 13, Poon does not disclose the adder comprises a carry-skip adder or a carry-save adder. However, the examiner takes an official notice that the carry-skip adder or the carry-save adder is widely used in conventional adder. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to have the adder as a carry-skip adder or a carry-save adder because it would enable to generate the carry-bits quickly and relatively low-cost.

Allowable Subject Matter

7. Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. U.S. Patent No. 6,529,931 to Besz et al. disclose a prefix tree adder with efficient carry generation.
- b. U.S. Patent No. 5,523,963 to Hsieh et al. disclose a logic structure and circuit for fast carry.
- c. U.S. Patent No. 5,010,511 to Hartley et al. disclose a digit-serial linear combining apparatus useful in dividers.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Chat C. Do
Examiner
Art Unit 2124

September 26, 2003



CHUONG DINH NGO
PRIMARY EXAMINER